MATERIAL SAFE DATA SHEET

Effective Date: February 1, 2005 Code: CT3 Ceramic Disc Pad - Asbestos Free

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: CT3 Ceramic Disc Pad - Asbestos Free
IDENTITY (AS USED ON LABEL AND LIST) FRICTION MATERIAL:
CMX-2530-FF, CMX-2510-GG, CMX-2520-GG

MANUFACTURER'S NAME:
Honeywell Friction Materials
Health, Safety & Environment Quality
(248) 362-7274

EMERGENCY TELEPHONE NUMBER:
(24 Hours/Day, 7Days/Week)
Chemtrec:
1-800-424-9300
Spill Response:
Honeywell Information:
1-800-707-4555

SUPPLIER'S NAME:
Rayloc
Division of Genuine Parts Company
3100 Windy Hill Road
Atlanta, GA 30339

Revision Date: Nov. 1, 2012

SECTION 2: HAZARDOUS INGREDIENTS

Ingredient Name:	CAS Number	Weight %
Cured Polymer Resin encapsulating the following:	None	Balance
Aluminum	7429-90-5	1-5
Antimony Trisulfide	1345-04-6	2-7
Barium Sulfate	7727-43-7	30-40
Calcium Hydroxide	1305-62-0	1-5
Copper	7440-50-8	10-15
Magnesium Oxide	1309-48-4	5-10
Molybdenum Disulfide	1317-33-5	0-2
Potassium Octatitanate	59766-31-3	0-20
Synthetic Graphite	7782-42-5	5-10
Man-made Vitreous Fibers	65997-17-3	2-7
Crystalline Silica	14808-60-7	0-0.5
Misc. Non-hazardous Ingredients	Mixture	15-20

Trace impurities and additional material names not listed above may also appear in Section 15 towards the end of the MSDS. These materials may be listed for local Right-To-Know compliance and for other reasons.

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Disc brakes are not normally considered hazardous; however, toxic and irritating materials may be released in a fire, machining, grinding, arching, etc. Exposure to dusts may cause eye irritation, soreness in the throat, nose and respiratory tract, and dermatitis-like reactions.

Carbon Black has been evaluated by IARC as possibly carcinogenic to humans. Refer to Section II for further information.

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POTENTIAL HEALTH HAZARDS
Skin: Some persons may be sensitive to residual uncured phenolic or cashew resins and develop dermatitis-like reactions similar to poison ivy.

Eyes: Exposure to dust may cause eye irritation.

Inhalation: Irritation or soreness in throat, nose and respiratory tract.

Ingestion: Not an anticipated route of entry.

Delayed Effects: The inhalation of airborne silica-quartz containing dusts may cause serious bodily harm such as pneumoconiosis or silicosis. Man-made vitreous fibers are considered an animal carcinogen via inhalation. Other ingredients are associated with lung irritation and possible lung injury from prolonged overexposure. However, the potential for exposure from this product is low because the ingredients in friction materials are physically bonded together by a resin polymer matrix.

Ingredients found on one of the OSHA designated carcinogen lists are listed below.

Ingredient Name	NTP Status	IARC Status	OSHA List
Man-made Vitreous Fibers	No	Yes (2B)	No
Silica Quartz	Yes	Group 1	Yes

SECTION 4: FIRST AID MEASURES

If any of the symptoms persist, seek medical attention immediately.

SKIN: Wash skin with soap and water after handling parts. Seek medical attention for persistent irritation.
Eyes: Flush eyes with cool running water if dust becomes embedded. Seek medical attention if reddening persists.
Inhalation: Remove affected person to fresh air.
Ingestion: Not an anticipated route of entry.
Advice to Physician: No specialized first aid or medical treatment procedures are required. Treat according to symptoms present.

SECTION 5: FIREFIGHTING MEASURES

FLASH POINT: None
Flash Point Method: Not applicable
Autoignition Temperature: Not established
Upper Flame Limit (volume % in air): Not applicable
Lower Flame Limit (Volume % in air): Not applicable
Flame Propagation Rate (solids): Not established
OSHA Flammability Class: Not classified as flammable material by OSHA

Extinguishing Media: Use extinguishing media appropriate for the surrounding area.

Unusual Fire and Explosion Hazards: Toxic and irritating materials may be released in a fire. This friction material product, as shipped, is not considered hazardous, but machining (arcing, grinding, drilling, or chamfering) may create dusts that are combustible and should be considered hazardous. If the product is ground or machined, local exhaust in accordance with the American National Standards Institute Z9.2 is recommended. Refer to the Bendix Brake Aftermarket Technical Bulletin Rebuilder Supplier Vol. No 80 104 for additional information.

Special Fire Fighting Precautions/Instructions: Self Contained Breathing Apparatus (SCBA) and full fire fighting turn-out gear (Bunk Gear) are recommended if articles are involved in a fire.

SECTION 6: ENVIRONMENTAL RELEASE MEASURES

IN CASE OF SPILL OR OTHER RELEASE: Always wear recommended personal protective equipment. No special precautions are required for intact packaging containing this product. If product is crushed, use respiratory protection equipment. Do not dry sweep product or use compressed air to clean up any residues. Use a wet method or vacuums equipped with High Efficiency Particulate (HEPA) filters to clean up any residues from this product. Wastes should be placed in dust tight containers or sealed plastic bags for disposal. Label Properly.

Spills and releases may have to be reported to Federal and/or local authorities. See Section 15 regarding reporting requirements.

SECTION 7: HANDLING AND STORAGE

NORMAL HANDLING:
Always wear recommended personal protective equipment. Avoid breathing or or creating dust. See Section 16 "Other Information" and follow the OSHA Appendix F to 1910.1001 "Work Practices and Engineering Controls for Automotive Brake and Clutch Inspection, Disassembly, Repair and Assembly - Mandatory".

STORAGE RECOMMENDATIONS: No special requirements.

SECTION 8: EXPOSURE CONTROL / PERSONAL PROTECTION

ENGINEERING CONTROLS: This friction material product, as shipped, is not considered hazardous, but machining (arcing, grinding, drilling or chamfering) may create dusts or airborne fibers in excess of the OSHA Permissible Exposure Limits (PEL's) for the respective ingredients and should be considered hazardous. If dusts exceed one or more of the OSHA PEL, NIOSH-approved respirators should be worn and proper engineering controls implemented. If the product is ground or machined, local exhaust to control dusts is recommended. The work should be monitored to determine whether employee exposures exceed OSHA PEL's for the respective ingredients. Packages containing this friction material product should be labeled as follows:

CAUTION
AVOID CREATING OR BREATHING DUSTS
CONTAINS HAZARDOUS SUBSTANCES
WHICH MAY CAUSE LUNG INJURY

Standard industrial hygiene practices, including housekeeping and vacuuming with High Efficiency Particulate (HEPA) filters or wet cleaning work surfaces to prevent dusts from becoming airborne should be implemented and maintained.

PERSONAL PROTECTIVE EQUIPMENT
SKIN PROTECTION: Chemical Resistant/Impermeable Gloves are recommended when handling or removing brake parts.

EYE PROTECTION:
Safety glasses are adequate for all uses.

RESPIRATORY PROTECTION:
Respiratory protection may be required if the ingredient exposures exceed

their respective Permissible Exposure Limits (PEL's) or the Time Weighted Average (TWA). Self Contained Breathing Apparatus (SCBA) should be used if dusts are created due to fire or explosion.

ADDITIONAL RECOMMENDATIONS:
See additional recommendations in Section 16 "Other Information" below and follow attached 29 CFR 1910.1001, Appendix F "Work Practices and Engineering Controls for Automotive Brake and Clutch Inspection, Disassembly, Repair and Assembly - Mandatory."

EXPOSURE GUIDELINES

INGREDIENT NAME	ACGIH TLV	OSHA PEL	OTHER LIMIT (NIOSH)
Aluminum		15 mg/m3 TWA total dust 5 mg/m3 TWA respirable fraction	5 mg/m3 TWA
Antimony Trisulfide (as Sb)	0.5 mg/m3 TWA	0.5 mg/m3 TWA	0.5 mg/m3 TWA
Barium Sulfate	10 mg/m3 TWA total dust	15 mg/m3 TWA total dust 5 mg/m3 TWA respirable fraction	5 mg/m3 TWA Respirable dust 10 mg/m3 TWA Total dust
Calcium Hydroxide	5 mg/m3 TWA total dust	15 mg/m3 TWA total dust 5 mg/m3 TWA respirable fraction	5 mg/m3 TWA
Copper	1 mg/m3 TWA total dust	1 mg/m3 TWA total dust	1 mg/m3 TWA total dust
Man-made Vitreous Fibers	1 fiber/cc3 inhalable fraction	None	3 fiber/cc3 inhalable fraction
Magnesium Oxide	10 mg/m3 TWA total dust	15 mg/m3 TWA total dust	None
Molybdenum Oxide	10 mg/m3 TWA	15 mg/m3 TWA	None
Silica Quartz	0.1 mg/m3 TWA total dust 2 mg/m3 TWA respirable fraction	See OSHA 1910.1000 total dust 5 mg/m3 TWA respirable fraction	0.05 mg/m3 TWA Respirable dust (Natural Graphite)
Synthetic Graphite	15 mg/m3 TWA total dust 2 mg/m3 TWA respirable fraction	15 mg/m3 TWA total dust 5 mg/m3 TWA respirable fraction	2.5 mg/m3 TWA Respirable dust 10 mg/m3 TWA (Natural Graphite)
Inert Dusts	10 mg/m3 TWA total dust 5 mg/m3 TWA respirable fraction	15 mg/m3 TWA total dust 5 mg/m3 TWA respirable fraction	None

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Gray or dark solid brake part
PHYSICAL STATE:	Solid
MOLECULAR WEIGHT:	May vary based on concentration of components
CHEMICAL FORMULA:	May vary based on concentration of components
ODOR:	Mild odor
SPECIFIC GRAVITY (water = 1.0):	1.7 - 2.5 gm/cc
SOLUBILITY IN WATER (weight %):	None
pH:	Not established
BOILING POINT:	Not applicable
MELTING POINT:	Not applicable
VAPOR PRESSURE:	Not applicable
VAPOR DENSITY (air=1.0):	No volaties in product
EVAPORATION RATE:	Not applicable COMPARED TO: None
% VOLATILES:	None
FLASH POINT:	None

(Flash point method and additional flammability data are found in Section 5.)

SECTION 10: STABILITY AND REACTIVITY

NORMALLY STABLE? (CONDITIONS TO AVOID):
Product is stable

HAZARDOUS POLYMERIZATION:
None

INCOMPATIBILITIES:
None

HAZARDOUS DECOMPOSITION PRODUCTS:
Toxic and irritating materials may be released in a fire.

SECTION 11: TOXICOLOGICAL INFORMATION

IMMEDIATE (ACUTE) EFFECTS: Skin and eye irritation may occur on repeated contact to dusts.

DELAYED (SUBCHRONIC AND CHRONIC) EFFECTS: The inhalation of airborne silica containing dusts may cause serious bodily harm such as pneumoconiosis or silicosis. The inhalation of man-made vitreous fibers has been linked to respiratory cancers in test animals. In addition, other ingredients (tin and barium oxides) can cause respiratory irritation and with prolonged overexposure, lung injury. These lung injuries may not be recognized until many years after exposure. The potential for such exposure from this product is low because the ingredients in friction

materials are physically bonded together by a resin polymer matrix.

OTHER DATA: None

SECTION 12: ECOLOGICAL INFORMATION

Normal decomposition is not expected to result in ecological damage.

SECTION 13: DISPOSAL CONSIDERATIONS

RCRA Is the unused product a RCRA hazardous waste if discarded? No
Is yes, the RCRA ID number is:

OTHER DISPOSAL CONSIDERATIONS: Dispose in accordance to all applicable federal, state and local regulations.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

SECTION 14: TRANSPORT INFORMATION

US DOT HAZARD CLASS: None

US DOT ID NUMBER: None

For additional information on shipping regulations affecting this, material, contact the information number found in Section 1.

SECTION 15:REGULATORY INFORMATION

TOXIC SUBSTANCES CONTROL ACT (TSCA)
TSCA INVENTORY STATUS: Articles are manufactured from materials found on the TSCA Inventory.

OTHER TSCA ISSUES: None

SARA TITLE III/CERCLA
"Reportable Quantities" (RQs) and/or "Threshold Planning Quantities (TPQs) exist for the following ingredients.

INGREDIENT NAME	SARA/CERCLA RQ (LB)	SARA EHS TPQ (LB)
Copper	5000	None

Spills or releases resulting in the loss of any ingredient at or above its

RQ requires immediate notification to the National Response Center [(800) 424-8802] and to your Local Emergency Planning Committee.

SECTION 311 HAZARD CLASS: Product as shipped - None

SARA 313 TOXIC CHEMICALS: The following ingredients are SARA 313 "Toxic Chemicals". CAS numbers and weight percents are found in Section 2.

INGREDIENT NAME	COMMENT
Aluminum	De Minimus concentration for section 313 is 1.0%
Antimony Compounds	De Minimus concentration for section 313 is 1.0%
Barium Sulfate	De Minimus concentration for section 313 is 1.0% (Barium and Barium Compounds).
Copper	De Minimus concentration for section 313 is 1.0%

STATE RIGHT-TO-KNOW
In addition to the ingredients found in Section 2, the following are listed for state right-to-know purposes.

INGREDIENT NAME	WEIGHT %	COMMENT
Aluminum	1-5	CA,IL,IN,KY,MA,MN,NJ,PN AND RI
Antimony Trisulfide	2-7	CA,MI,MN,NJ,NY AND PA
Barium Sulfate	30-40	MA,MN AND PA
Calcium Hydroxide	1-5	CA,FL,MA,MN AND PA
Copper	10-15	CA,FL,MA,MI,MN,NJ AND PA
Magnesuim Oxide	5-10	IL,MA,MN,NJ,PA AND RI
Molybdenum Disulfide	0-2	MA AND NJ
Man-made Vitreous Fibers	2-7	CA-Prop 65 carcinogen,MN,PA AND RI
Silica Quartz	0-0.5	CA-Prop 65 carcinogen,FL,MA,MN and NJ
Synthetic Graphite	5-10	IL,MA,PA AND RI

ADDITIONAL REGULATORY INFORMATION: The finished units of friction material shipped to you contain polymer resin encapsulated ingredients. Subsequent processing (arcing, grinding, drilling or chamfering) may create a potential for the release of the ingredients to the atmosphere (e.g. from your dust collection system if you grind our product) or to a landfill (e.g. if you dispose of wetted or palletized grinding dust or drill chips). If they are not of sufficient quantities, you may be required to report such "Releases" on EPA Form "R".

WHMIS CLASSIFICATION (CANADA): Not a controlled product as shipped. Certain processes (e.g., grinding) may cause this article to be considered as a controlled product.

FOREIGN INVENTORY STATUS: Not determined.

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SECTION 16: OTHER INFORMATION

Other Information:

1. Always follow the "Work Practices and Engineering Controls for Brake and Clutch Inspection, Disassembly, Repair and Assembly - Mandatory" (29 CFR 1910.1001, Appendix F). Although some friction materials used for brake service still contain asbestos, most suppliers are replacing asbestos with steel, mineral, and/or synthetic fibers. Because long term medical effects of these fibers are unknown, it is suggested that exposure levels be controlled for all replacement friction materials.

2. Whenever possible, purchase friction materials that are preground and ready for installation. If machining is necessary, there is a possibility that the Permissible Exposure Limit (PEL) for one or more of the ingredients in the friction material may be exceeded. Local exhaust ventilation must be provided so that worker exposures are maintained below the PEL. Local exhaust ventilation consists of dust collection hoods or enclosures connected by ductwork or piping to a pollution control device.

3. In certain grinding operations where concentrations cannot be reduced below the PEL, a respirator program should be implemented. Respirators also may be required during certain maintenance, start-up or emergency situations where engineering controls cannot maintain concentrations below the PEL.

4. Good housekeeping is essential in a workplace where friction materials are handled. Vacuums equipped with High Efficiency Particulate (HEPA) filters should be used to remove accumulations of friction dusts and wastes. Never use compressed air or dry sweeping for cleaning.

5. Good personal hygiene practices are important in minimizing dust exposures. Do not smoke. Wash before eating. If the PEL is exceeded, protective equipment should be worn. Change into work clothes upon arrival at work and change from work clothes at conclusion of work.

DISCLAIMER OF LIABILITY: